

SECTION 15212

COMPRESSED AIR DRYER AND AFTERFILTER

PART 1 GENERAL

1.1 SUMMARY

- A. Provide labor, materials and equipment necessary to furnish the indicated factory assembled and tested, packaged, self-contained, ADSORPTION COMPRESSED AIR DRYERS, including accessories as required for a complete, properly functioning, installation.
- B. Related Work Specified Under Other Sections
 - 1. Division 15 Section "General Mechanical Requirements."
 - 2. Division 15 Section "Aboveground Piping Systems."
 - 3. Division 15 Section "Screw Type Air Compressor."
 - 4. Division 16 Sections for Electrical Work

1.2 QUALITY ASSURANCE

- A. Requirements Of Regulatory Agencies
 - 1. Provide materials and equipment and execute the WORK, including test and inspections, per applicable provisions of Federal, State and local Government laws and ordinances and referenced codes and standards. Governing laws, ordinances, codes and standards constitute minimum requirements.
- B. Source Quality Control
 - 1. Perform standard shop tests for each component to ensure compliance with intent of these SPECIFICATIONS.
 - 2. The dryer shall be given a factory "run-in" at rated load.
 - 3. Materials and equipment shall be the products of a manufacturer regularly engaged in the manufacture of such products, shall essentially duplicate equipment that has been in satisfactory service prior to issue date of this SPECIFICATION and shall be supported by a service organization that is reasonably convenient to the site.
- C. Shop Tests
 - 1. Give dryer a factory "run-in" at rated load, and calibrate controls and instruments.
 - 2. Additional shop tests shall be as deemed necessary to assure performance in accordance with the CONTRACT DOCUMENTS, at the OWNER'S facility.

1.3 SUBMITTALS

- A. Shop Drawings And Product Data
 - 1. Furnish submittals for items that are identified in this SECTION by a different typeface and a bracketed code (e.g., *Item [L]*). Refer to Division 01 Section "Shop Drawings, Product Data, and Samples" for definition of codes for types of submittals and the

administrative requirements governing submittal procedure. Additional submittal requirements pertaining to this SECTION are specified herein under this Article.

2. Shop drawings shall delineate provisions for obtaining required performance under project service conditions. Performance data shall be certified to be applicable to project service conditions.
3. Shop drawings submittals shall include clearly delineated verification of compliance with the elements of the CONTRACT DOCUMENTS, performance, details of configuration, construction, support, functional ancillary provisions, utilities including power connections, wiring diagrams and sequence of operations, installation details for construction field conditions, and vibration amplitude limits for rotating equipment.
4. Submit integrated electrical drawings indicating power, control and instrument wiring interfacing with work under separate contracts for field work as well as factory assembled WORK. CONTRACTOR'S electrical drawings are acceptable only when modified and supplemented to exactly reflect CONTRACT conditions. The "system" of drawings shall include overall schematic (elementary) diagram of the entire system of power circuitry detailing the number of and the wire and conduit sizes, wiring diagrams showing the wiring layout of component assemblies or systems, interconnection wiring diagrams showing terminations of interconnecting conductors between component assemblies, systems, control devices, and control panels with interconnections, and sequence of operation for components, assemblies of systems.

B. Test Reports

1. *Test reports [T]*: Submit air dryer test performance test data.

C. Certificates

1. Certificate: Submit manufacturer's data report, Form U-1.

D. Guarantee

1. Guarantee the unit to meet the operating conditions, capacity and performance conditions as specified and to remain serviceable for the following specified period. If either the unit or accessories fail to meet operating requirements or if failure of any part occurs during the guarantee period, rework or replace the affected items promptly to meet the CONTRACT requirements at no cost to the OWNER.
2. The OWNER reserves the option to request a performance test throughout the warranty period.
3. Based on no performance test, warranty shall extend for two years from date of initial operation. If a performance test is made and the machine meets its guaranty, the warranty shall be as above. If unit fails to meet its guaranteed performance, then warranty shall extend twenty-four months from date of acceptance of modified unit.

1.4 OPERATING AND MAINTENANCE DATA

- A. Furnish, per Division 01 Section "Operating and Maintenance Data", installation, operation, lubrication and maintenance instructions and spare parts data manuals for equipment provided under this CONTRACT.

- B. Manuals shall incorporate data to enable operators and maintenance personnel to understand the equipment, its potentialities, limitations and maintenance needs. Data on design, construction, installation and operating features shall be included. Data submitted shall exclude content, which is not applicable to equipment purchased under this CONTRACT. Manuals shall include the following:
 - 1. Diagrams (See Shop Drawings requirements).
 - 2. System OEM Components and assembly drawings as-built.
 - a. Performance: Normal and abnormal conditions.
 - b. Installation.
 - c. Operation.
 - d. Trouble-shooting.
 - e. Safety precautions.
 - f. Maintenance and repair.
 - g. Nearest authorized representative and stocking spare parts source.
 - h. Recommended spare parts.

1.5 PERSONNEL INSTRUCTION

- A. Provide necessary instruction to OWNER'S installing contractor.
- B. Provide, prior to start-up, not less than 8 "classroom" and necessary field training hours for OWNER'S operating and maintenance personnel, upon mutually satisfactory arrangement with OWNER.

PART 2 PRODUCTS

2.1 COMPRESSED AIR DRYER

- A. General
 - 1. Adsorptive desiccant type compressed air dryer utilizing heat of compression for regeneration. Unit shall be fail-safe, complete with rotating desiccant drum with drying section and regeneration section, water cooled regeneration air cooler, water separator, automatic condensate drain, safety drain, rotating drum drive motor, and all connection parts.
- B. Dryer Housing
 - 1. Tank shall be designed, constructed and stamped in accordance with ASME Boiler and Pressure Vessel Code, Section VIII. Tank shall be fitted with wet air inlet, ejector, regeneration air inlet, regeneration cooler inlet and outlet connections, dry air outlet, condensate drain outlet, built in water separator, and dew point indicator.
 - 2. Motor driven rotating desiccant drum shall be glass fiber impregnated with silica gel.
- C. Cooler
 - 1. Water cooled regeneration cooler to condense water vapor during regeneration. Provide cooler with: Manufacturers standard admiralty brass, stainless steel or 90/10 copper-nickel

tubes; nonferrous tube sheets and baffles; standard shell construction. Tube bundle shall be removable.

D. Intercomponent Piping

1. Provide intercomponent air, cooling water, and condensate piping ready for single field connection to each utility service. Piping shall be per ANSI/ASME B31.1.
2. Provide dry air piping for pilot or control air equipment. Equipment shall include a pilot air filter. Valve operators shall be supplied with permanently lubricated packing. Liquid oil lubricators will not be permitted.
3. Four-way directional valves shall be manufacturer's standard for the application.

E. Painting And Protection

1. Prime and finish paint uninsulated surfaces using manufacturer's standard paint. Fit openings with suitable removable protective covers prior to shipping.

F. Manufacture

1. Atlas Copco, MD 400.
2. Other approved.

2.2 AFTERFILTER

A. Provide downstream of dryer with capacity as Scheduled on the DRAWINGS.

B. Filter housing shall be constructed of welded carbon steel and stamped in accordance with ASME Code VIII, Div I with a maximum working pressure of 250 psig at 225 °F. Fit housing with manufacturers' standard electronic zero air loss condensate drain valve.

C. Filter cartridge shall be 99.99% efficient at 0.01 micron meter. Filter media shall be capable of 150 °F operating temperature.

D. Manufacture

1. Atlas Copco, PD 1050F.
2. Other approved.

PART 3 EXECUTION

3.1 GENERAL

A. Fabricate and assemble air dryers and related equipment per specified requirements. Shop test in the presence of the OWNER. Disassemble as required for shipment. At site, supervise installation and test until acceptance by OWNER and supervise and participate in OWNER personnel training.

3.2 FIELD TESTS

- A. Verify proper operation and performance of air dryer unit including all operating and safety controls.
- B. Record all compressed air dryer instrument readings during testing for inclusion in testing report submitted to the OWNER.

END OF SECTION

Revision History	
Date	Rev. No.
B	0
C	0
D	0
E	0
F	0
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